

Translation



PATENT COOPERATION TREATY

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PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 03P464WO	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/JP2003/013981	International filing date (day/month/year) 31 October 2003 (31.10.2003)	Priority date (day/month/year) 01 November 2002 (01.11.2002)
International Patent Classification (IPC) or national classification and IPC B23B 51/00, B28D 1/14		
Applicant KABUSHIKI KAISHA MIYANAGA		

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>6</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>2</u> sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>	
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</p>	

Date of submission of the demand 22 April 2004 (22.04.2004)	Date of completion of this report 05 October 2004 (05.10.2004)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2003/013981

## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on translations from the original language into the following language \_\_\_\_\_, which is language of a translation furnished for the purpose of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☐ The international application as originally filed/furnished
- ☒ the description:  
pages \_\_\_\_\_ 1-8 \_\_\_\_\_, as originally filed/furnished  
pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the claims:  
pages \_\_\_\_\_, as originally filed/furnished  
pages\* \_\_\_\_\_, as amended (together with any statement) under Article 19  
pages\* \_\_\_\_\_ 1-5 received by this Authority on 05 August 2004 (05.08.2004)  
pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the drawings:  
pages \_\_\_\_\_ 1-8 \_\_\_\_\_, as originally filed/furnished  
pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/JP 03/13981

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Claims	1-5	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-5	NO
Industrial applicability (IA)	Claims	1-5	YES
	Claims		NO

### 2. Citations and explanations

Document 1: JP 62-57808 A (Honda Motor Co., Ltd.), 13 March 1987

Document 2: Microfilm of the specification and drawings annexed to the Japanese Utility Model Application No. 123716/1989 (Laid-open No. 62714/1991), 19 June 1991

Document 3: JP 59-64212 A (Andreas Meier), 12 April 1984

Document 4: JP 57-21213 A (Mitsubishi Metal Corporation), 3 February 1982

Document 5: JP 51-62475 A (Kobe Steel, Ltd.), 31 May 1976

Claims 1 to 3

The invention set forth in claims 1 to 3 does not involve an inventive step in the light of documents 1 and 2 cited in the international search report and newly cited documents 3 to 5.

The "auxiliary blades (8, 10a, 10b)" of the prior art in document 1 (page 2, upper left column, lines 3 to 12; fig. 1 and 2) and the "recessed portion (5)" set forth in document 2 both correspond to the "notch with a groove bottom" of this application.

In addition, the groove surrounded by "inner side blades (52, 62, 72) and peaks (53, 63, 73)" disclosed in document 3 correspond to the "notch with a groove bottom"

of this application. In particular, page 2, upper right column, line 2 to lower left column, line 2 of document 3 sets forth a feature wherein such a structure acts as a chip separating piece.

Document 4 (page 3, upper left column, line 18 to upper right column, line 1) sets forth a feature wherein an arbitrarily-defined shape can be used as the bearing surface view of the groove which is provided to the central part of the blade tip of a drill bit, and document 5 (fig. 1) sets forth a "semicircular long hole shape".

It would be easy for a person skilled in the art to apply said feature to the inventions set forth in documents 1 to 3 to employ an arbitrarily-defined shape as the bearing surface view.

#### Claims 4 and 5

The invention set forth in claims 4 and 5 does not involve an inventive step in the light of documents 1 and 2 cited in the international search report and newly cited documents 3 to 5.

Document 1 (fig. 2 (a)), document 2 (description, page 4, lines 9 to 14) and document 3 (fig. 7) set forth a feature wherein the notch provided to the central part of the blade tip becomes wider from the deepest part.

Documents 1 to 5 do not set forth a feature wherein the notch is constituted in "an arc-shaped surface when viewed from the side", but it would be easy for a person skilled in the art to employ an arc surface shape as a shape wherein the groove increases in width from the deepest part.

(Document 5 (fig. 1) is acknowledged to be an arc surface shape when viewed from the side, depending on the direction.)

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In addition, documents 1 to 3 set forth a feature wherein three cutting blades are used, and the shape of the notch when viewed from the bottom is merely a design matter which a person skilled in the art could change as necessary.

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VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claim 5 received by the International Preliminary Examining Authority on 5 August 2004

The aforementioned claim 5 contains the wording "the drill bit set forth in one of claims 1 to 4", but if claim 5 is dependent on claim 3, this disclosure is inconsistent with a notch "with a three-lobed shape when viewed from the bearing surface".